

**Amendments to the Claims**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. (Currently Amended) An isolated nucleic acid molecule comprising the nucleotide sequence of SEQ ID NO:3 or a full complement thereof.
2. (Currently Amended) The nucleic acid molecule of any one of claims 1 and ~~63-65~~68-70, further comprising vector nucleic acid sequences.
3. (Currently Amended) The nucleic acid molecule of any one of claims 1 and ~~63-65~~68-70, further comprising nucleic acid sequences encoding a heterologous polypeptide.
4. (Currently Amended) A host cell which contains the nucleic acid molecule of any one of claims 1 and ~~63-65~~68-70.
- 5-11. (Canceled)
12. (Previously Presented) A method for producing a MEKK1 protein comprising culturing the host cell of claim 4 under conditions in which the nucleic acid molecule is expressed.
- 13-18. (Canceled)
19. (Currently Amended) A method for detecting the presence of a MEKK1 nucleic acid molecule in a sample comprising:
  - a) contacting the sample with a nucleic acid probe or primer which selectively hybridizes to the nucleic acid molecule of any one of claims 1 and ~~63-65~~68-70; and
  - b) determining whether the nucleic acid probe or primer binds to a nucleic acid molecule in the sample to thereby detect the presence of a MEKK1 nucleic acid molecule in the sample.

20. (Currently Amended) A kit comprising a compound which selectively hybridizes to the MEKK1 nucleic acid molecule of any one of claims 1 and ~~63-65~~68-70 and instructions for use.

21-42. (Canceled)

43. (Previously Presented) An isolated nucleic acid molecule which encodes an active fragment of MEKK1 that mediates apoptosis, said fragment having 95% sequence identity to residues 875-1493 of SEQ ID NO:4, wherein % identity is determined over the entire length of residues 875-1493 of SEQ ID NO:4.

44-49. (Canceled)

50. The nucleic acid molecule of claim 43, which consists of nucleotides 2637-4493 of SEQ ID NO:3, or a nucleotide sequence that, due to the degeneracy of the genetic code, encodes the same amino acid sequence as nucleotides 2637-4493 of SEQ ID NO:3.

51. (Canceled)

52. (Currently Amended) An isolated nucleic acid molecule encoding a ~~protease~~ caspase-resistant MEKK1 protein, wherein the ~~protease~~ caspase-resistant MEKK1 protein comprises an amino acid sequence having at least 95% identity to the amino acid sequence of SEQ ID NO:4, wherein % identity is determined over the entire length of SEQ ID NO:4, and wherein at least one codon of the nucleic acid molecule encoding an amino acid equivalent to at least one of amino acids 871-874 of SEQ ID NO:4 is mutated such the encoded MEKK1 protein is resistant to proteolysis by a caspase after an amino acid equivalent to amino acid 874 of SEQ ID NO:4.

53. (Previously Presented) The nucleic acid molecule of claim 52, wherein at least one codon is mutated to encode an alanine residue.

54. (Previously Presented) The nucleic acid molecule of claim 52, wherein each codon is mutated to encode an alanine residue.

55-57. (Canceled)

58. (Currently Amended) An expression vector comprising the nucleic acid molecule of any one of claims 43, 50 and ~~51~~52.

59. (Currently Amended) An expression vector comprising the nucleic acid molecule of ~~any one~~ of claims ~~52~~53 or 54.

60. (Previously Presented) A host cell containing the expression vector of claim 58.

61. (Previously Presented) A host cell containing the expression vector of claim 59.

62-67. (Canceled)

~~63~~68. (Currently Amended) An isolated nucleic acid molecule which encodes a protein having at least 95% identity to the sequence set forth as SEQ ID NO:4, wherein % identity is determined over the entire length of SEQ ID NO:4 and wherein the protein is capable of phosphorylating a mitogen-activated protein kinase kinase (MKK) protein.

~~64~~69. (Currently Amended) The nucleic acid molecule of claim ~~63~~68, wherein the encoded protein is capable of phosphorylating a MKK protein selected from the group consisting of MKK1, MKK2, MKK3 and MKK4.

~~65~~70. (Currently Amended) An isolated nucleic acid molecule which encodes a protein comprising the amino acid sequence of SEQ ID NO:4.

~~66~~71. (Currently Amended) The isolated nucleic acid molecule of claim 52, ~~which encoded the amino acid sequence of SEQ ID NO:4 but for the mutation wherein~~ at least one codon of the nucleic acid molecule encoding amino acid residues 871-874 of SEQ ID NO:4 is mutated.

